

EXHIBIT 13

**[REDACTED VERSION OF DOCUMENT
SOUGHT TO BE SEALED]**

1 UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF
2 CALIFORNIA SAN JOSE DIVISION
3 CASE NO. 5:16-cv-00523-RMW

3 30(b)(6) DEPOSITION OF SEAGATE July 26, 2017
4 TECHNOLOGY, LLC BY GLEN ALMGREN

5 IN RE SEAGATE TECHNOLOGY, LLC LITIGATION

6 APPEARANCES:

7 AXLER GOLDICH, LLC

8 By Marc A. Goldich, Esq.

9 and

10 Matthew Strout, Esq.

11 1520 Locust Street, Suite 301

12 Philadelphia, Pennsylvania 19102

13 Appearing on behalf of Plaintiffs.

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15 By Anna S. McLean, Esq.

and

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Appearing on behalf Defendants.

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Philadelphia, Pennsylvania 19102

1

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Q So what accelerated life testing is

performed in particular?

A In addition to the six-week demonstration

reliability testing, that test is extended out past

six weeks. The six-week number is what we use to

calculate our AFRs, but we keep the testing running

out past that and out past what customers will

ultimately test to do exactly that, to -- it's a

long-term accelerated test that we use to ensure that

we don't have failure modes that exist even out past

the six-week test.

Q So -- so initially, there's a six-week

test period; is that right?

A Correct.

Q At a temperature, did you say it was 60

degrees Celsius?

A Yes.

Q And based on that test, you come up with

the AFR; is that right?

A That is right.

Q And then you extend the test past the six weeks for purposes of accelerated life; is that correct?

A Yes.

Q How long do you -- do you run those tests? Those extended life tests?

A We run it at a minimum of nine weeks. There can be -- there can be testing extended past that, but it's typically nine weeks.

Q What sort of circumstances would there be for a drive to need to do more than a nine-week extension test?

MS. MCLEAN: Objection. Beyond the scope, calls for speculation.

A Relative to Grenada.

Q (By Mr. Goldich) First, in general.

MS. MCLEAN: Same objections.

A In general, we do -- we do longer testing for our Enterprise test drives because of the environment they're in and the longer warranty period of Enterprise drives versus Desktop drives.

Q (By Mr. Goldich) So typically for a Desktop drive, you would do a nine-week accelerated life beyond the six-week test, and you wouldn't

extend beyond that nine weeks, correct?

A We wouldn't extend beyond -- beyond the

nine weeks as a whole, typically would not.

Q Did you extend beyond nine weeks with

Grenada?

A I don't recall.

Q [REDACTED]

[REDACTED]

Q [REDACTED] [REDACTED]

[REDACTED]

Q [REDACTED] [REDACTED]

Q [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Q [REDACTED]

[REDACTED]

Q [REDACTED]

Q [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Q The next sentence says, "Currently demo

[REDACTED] 101k MTBF and potential of 167k," right?

[REDACTED] A Correct.

[REDACTED] Q And what does that mean?

[REDACTED] A What that means is where the product is

Q Currently demonstrating 101k or 101,000 hours. So

101,000 is basically the number -- the MTBF, the

units are in time. So this is saying it's 101,000

MTBF. That's what's being demonstrated, and then

there's a projection or a potential of 167,000 hours.

Q Okay. So -- so the drives were currently

demonstrating 101,000 mean time between failures,

correct?

A Correct.

Q And a potential of 167,000 mean time

between failure, correct?

A Correct.

Q And the potential is a -- is an estimation

based on what exactly?

A It's an estimation based on fixes that are

upcoming, but may not be validated yet.

Q Okay. So you identify problems, for

instance in this case, degrade readers and new media

defects, right?

A Correct.

Q You propose a corrective action or fix.

correct?

A Correct.

Q And then you calculate the change and the

mean time between failure after the corrective action

is implemented?

A Yes When the corrective action is

implemented and demonstrated, that's that 101k MTR

number.

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Q Okay. Now, under this MTBF chart, we have

the word demo, which means demonstrated, right?

A Yes.

Q And then it says, "Validated end

potential," and earlier we were discussing validated

end potential in terms of corrective action, right?

A Yes.

Q Okay. So is it correct that the

demonstrated mean time before failure on April 27,

2011 was 101,000, right?

A Correct.

Q And that was after certain corrective

actions were taken?

A Correct.

Q And the potential, as we saw in the

Executive Summary, was calculated to be 167,000?

A Correct.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Q Do you know why Seagate uses the Weibull

distribution as opposed to an exponential

distribution or some other reliability model? A

I believe there are four of them, Weibull being one.

A It's ultimately been the distribution that

has fit the data the best.

Q Any reason why it fits best?

A What it does, with typical hard drives,

you have -- if you've heard of the bathtub curve,

it's not just with hard drives, it's with anything

reliability-focused. There are -- there can be

distinct phases of, you know, infant mortality versus

kind of a reduced failure rate versus a wear-out

mechanism, and the Weibull distribution is able to

model those very well.

Q Does Seagate test all of its drives with

the Weibull beta that's .608098?

A: No. That number is based on the data on

this test bed that we are looking at right here.

Q: How do you come to that figure for the

Weibull beta?

A: Well, you need a few pieces of data. You

need to know the number of units in the test, which

you have at 1651; you need to know the test time for

the population; and then you need to know the time of

failure for any individual serial number that is in

this.

Q: [REDACTED]

Q: [REDACTED]

Q: [REDACTED]

[REDACTED] [REDACTED]

Q:

Q: [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

Q: [REDACTED] [REDACTED]

Q: [REDACTED] [REDACTED]

[REDACTED] [REDACTED] [REDACTED]

Q: [REDACTED]

1

[REDACTED]

[REDACTED]

[REDACTED]

Q Has the Weibull ever been set to 1 or

greater than 1 for -- for AFR testing of drives at

Seagate?

A For Grenada drives.

Q Let's start with Grenada.

A Not to my knowledge. I don't believe

we've ever had a Weibull beta or greater. We don't

set it. It's calculated from the data.

Q Right.

Q Right.

Q Has anyone ever suggested that -- that the

data that Seagate's collected about its drives would

support having a Weibull of 1 or greater than 1 for

its reliability testing?

MS. MCLEAN: Objection. Vague, lacks

foundation.

Q (By Mr. Goldich) Do you know?

A For Grenada.

Q For reliability testing generally?

A That we should set the beta to 1 or

greater?

1

[REDACTED] (test)

2

[REDACTED] MS. MCLEAN: Objection. Vague, lacks

3

[REDACTED] foundation, overbroad

4

[REDACTED] (a) No. We wouldn't -- we wouldn't

5

[REDACTED] specifically set the beta to anything. We would let

6

[REDACTED] the beta come out of the data.

7

[REDACTED] (b) [REDACTED] [REDACTED]

8

[REDACTED] [REDACTED]

9

[REDACTED] [REDACTED] [REDACTED]

10

[REDACTED]

11

[REDACTED] (c) [REDACTED] [REDACTED]

12

[REDACTED] [REDACTED]

13

[REDACTED] (d) [REDACTED] [REDACTED]

14

[REDACTED] [REDACTED]

15

[REDACTED] [REDACTED] [REDACTED]

16

[REDACTED]

17

[REDACTED] (e) [REDACTED] [REDACTED]

18

[REDACTED] [REDACTED]

19

[REDACTED] [REDACTED]

20

[REDACTED] [REDACTED]

21

[REDACTED] (f) [REDACTED] [REDACTED]

22

[REDACTED] [REDACTED]

23

[REDACTED] (g) [REDACTED]

24

[REDACTED] (h) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Q [REDACTED] "Fixed validation" [REDACTED] [REDACTED]

[REDACTED] based MAT 1.2, 1.3 [REDACTED] STC failure rate the first 180

[REDACTED] hours versus MAT 2.0." [REDACTED] Is this stating that this

[REDACTED] corrective action was -- was confirmed as a fix

[REDACTED] during these tests?

[REDACTED] A [REDACTED] Yes, more specifically in the MAT 2.0

[REDACTED] test

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED] [REDACTED] [REDACTED]

1 STATE OF COLORADO) .

2 ss) . REPORTER'S CERTIFICATE

3 COUNTY OF DENVER) .

4 I, Brittany D. Leis, do hereby certify that
5 I am a Court Reporter and Notary Public within the
6 State of Colorado; that previous to the commencement
7 of the examination, the deponent was duly sworn to
8 testify to the truth.

9 I further certify that this deposition was
10 taken in shorthand by me at the time and place herein
11 set forth, that it was thereafter reduced to
12 typewritten form, and that the foregoing constitutes
13 a true and correct transcript.

14 I further certify that I am not related to,
15 employed by, nor of counsel for any of the parties or
16 attorneys herein, nor otherwise interested in the
17 result of the within action.

18 In witness whereof, I have affixed my
19 signature this 4th day of August, 2017.

20 My commission expires December 13, 2017.

21
22
23 _____
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